

Appl. No. 10/646,649
Reply to Office action of January 9, 2005

REMARKS

In the Office Action mailed January 9, 2005 by the United States Patent and Trademark Office, the Examiner rejected all pending claims 1, 2, 4, 6-10, 13, 16-20, and 22. Claims 1, 8, and 10 have been amended. After entry of this amendment, 15 claims remain pending (2 independent claims, 13 dependent claims). No new matter has been added. Reconsideration is respectfully requested in light of the above amendments and the following remarks.

I. Claim Rejections – 35 U.S.C. § 112

Claim 8 stands rejected to under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner states that the phrase “a position signal” is unclear in the context of the claims. Claim 8 has been amended to correct this informality. Applicants therefore respectfully request that the Section 112 rejection be withdrawn.

II. Claim Rejections – 35 U.S.C. §103

Claims 1, 2, 6-8, 13, 16, 17, 19, 20, and 22 stand rejected to under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,783,089 (the “Hamilton reference”) in view of U.S. Pat. No. 5,167,289 (the “Stevenson reference”). Claims 4, 9, 10, and 18 stand rejected to under 35 U.S.C. 103(a) as being unpatentable over the Hamilton reference in view of the Stevenson reference further in view of U.S. Pat. No. 6,398,227 (the “Lech reference”). These rejections are respectfully traversed.

Applicants respectfully submit that none of the cited references, taken alone or in combination, disclose all the claim limitations of at least the independent claims. Moreover, there is no motivation to combine the references as suggested by the Examiner. Accordingly, the Examiner has not set forth a prima facie case of obviousness.

A. *The Hamilton Reference*

The Hamilton reference is generally directed to a vehicle-leveling system using air springs, wherein position switches at each air spring generate signals used to deflate or inflate the air springs

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as may be appropriate (see, e.g., Abstract). Specifically, the position switches generate a "duty cycle" in accordance with the vertical motion of the vehicle as it is moving, and as the load redistributes, and it is this signal that is used to determine the correct signal to send to the air springs (column 2, lines 1-21).

The Hamilton reference does not disclose a system wherein the payload is determined from both position information and pressure information as recited in the claims. Indeed, the Hamilton reference teaches away from the present invention, as it states that the system as conceived "is accomplished without elaborate or expensive position indicators for the vehicle" (column 2, lines 19-21). That is, Hamilton focuses on using simple switches (and the duty cycle of those switches during movement) rather than a position sensor capable of providing the position information required by the claims of the present application. The position switches of the Hamilton reference are not "position sensors" as that phrase is used in the claims.

The Examiner, in his Response to Arguments (§ 6), argues that the Hamilton reference at column 7, lines 10-20 "shows the payload being calculated from both [pressure and position.]" Applicants disagree. The "position" disclosed by the Hamilton reference is a pre-calculated estimate of air spring position based on pressure; it is not an actual measured position value received from a position sensor. Hamilton merely discloses a lookup table 72 that "has been previously encoded with data proving a concordance between pressure within the air spring, height (i.e., length of the air spring) and load." Column 6, lines 46-49. This "position" information is what is referred to in the section cited by the Examiner. See, for example, FIG. 14 and corresponding text at column 6, lines 55-60, which disclose example graphs of load and deflection that are embodied in ROM 72. This information is "specific to the characteristics of the air spring used on the vehicle." In contrast, embodiments of the present invention may be used in any application, as it is not necessary for pressure/displacement characteristics to be determined a priori.

Thus, in summary, the Hamilton reference does not disclose a "first sensor configured to generate a first position signal." Nor does it disclose a controller configured to determine a payload based on a "first pressure signal" and a "first position signal."

Appl. No. 10/646,649
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B. The Stevenson reference

The Stevenson reference, as with the Hamilton reference, generally relates to the use of air springs to monitor load in a vehicle. The load distribution on each axle is displayed to the driver. See, e.g., Abstract. The Stevenson reference does not disclose a "first sensor configured to generate a first position signal." Nor does it disclose a controller configured to determine a payload based on a "first pressure signal" and a "first position signal." Stevenson merely discloses the use of an air spring pressure sensor T1-T6. See Fig. 2.

Thus, the Stevenson reference cannot cure the deficiencies of the Hamilton reference with respect to claims 1, 2, 6-8, 13, 16, 17, 19, 20, and 22. No combination of these two reference would include each and every element of the claims.

C. The Lech reference

In general, the Lech reference relates to an apparatus for adjusting the ride of a vehicle in motion (e.g., a backhoe loader, a forklift, etc.) by measuring the load in a hydraulic circuit, then adjusting the pressure in an "accumulator" to accommodate these loads and adjust the ride accordingly. The Lech reference is related to improving the ride of a vehicle under transient conditions, rather than leveling and determining the load of the vehicle.

The Lech reference does not disclose a system wherein the payload is determined from both position information and pressure information as recited in the claims. Furthermore, the Lech does not disclose the leveling of the vehicle, the display of payload, or an overload warning in the event the payload is greater than a predetermined threshold value. Accordingly, the Lech reference does not disclose each and every element of pending claims 4, 9, 10, and 18.

In accordance with the above, Applicants respectfully submit that all Section 103 rejections should be withdrawn with respect to the pending claims.

III. Conclusion

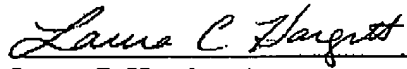
In view of foregoing, Applicants respectfully submit that Examiner's rejections have been overcome, and that the application is in condition for allowance, and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this

Appl. No. 10/646,649
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application, Applicants request that the Examiner contact the undersigned at the telephone number set forth below.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge GM Deposit Account No. 07-0960 for any fee which may be due.

Respectfully submitted,



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